

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 17601-043001	Application No. 10/630,345
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.803(b))		Applicant Joseph A. Zupanick	
		Filing Date July 29, 2003	Group Art Unit 3673

U.S. Patent Documents

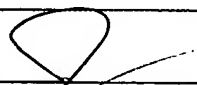
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
de	A1	3,744,565	07/10/1973	Brown			
	A2	4,060,130	11/29/1977	Hart			
	A3	4,417,829	11/29/1983	Berezoutzky			
	A4	4,889,186	12/26/1989	Hanson et al.			
	A5	5,676,207	10/14/1997	Simon et al.			
	A6	6,237,284	05/29/2001	Erickson			
	A7	2002/0043404 A1	04/18/2002	Trueman et al.			
	A8	2004/0140129 A1	07/22/2004	Gardes			
✓	A9	2004/0226719 A1	11/18/2004	Morgan et al.			

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
de	B1	EP 1 316 673 A2	06/04/2003	EPO			N/A	
	B2	SU-876968	10/30/1981	Russia			Y	
	B3	442,008	01/23/1936	United Kingdom			N/A	
	B4	444,484	03/17/1936	United Kingdom			N/A	
	B5	651,468	04/04/1951	United Kingdom			N/A	
	B6	893,869	04/18/1962	United Kingdom			N/A	
de	B7	WO 2004/035984 A1	04/29/2004	WIPO			N/A	

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
de	C1	Notification of Transmittal of the International Search Report and the Written Opinion of the International Searching Authority, or the Declaration (3 pages), International Search Report (5 pages) and Written Opinion of the International Searching Authority (6 pages) re International Application No. PCT/US2004/012029 mailed September 22, 2004
de	C2	Brunner, D.J. and Schwoebel, J.J., "Directional Drilling for Methane Drainage and Exploration in Advance of Mining," REI Drilling Directional Underground, World Coal, 1999, 10 pages

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	9/15/05
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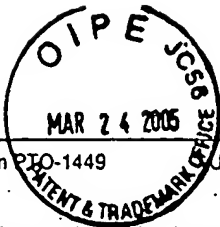
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	C3	Thakur, P.C., "A History of Coalbed Methane Drainage From United States Coal Mines," 2003 SME Annual Meeting, February 24-26, Cincinnati, Ohio, 4 pages
	C4	U.S. Climate Change Technology Program, "Technology Options for the Near and Long Term," 4.1.5 Advances in Coal Mine Methane Recovery Systems, pp. 162-164
	C5	Notification of Transmittal of the International Search Report and the Written Opinion of the International Searching Authority, or the Declaration (3 pages), International Search Report (3 pages) and Written Opinion of the International Searching Authority (7 pages) re International Application No. PCT/US2004/017048 mailed October 21, 2004
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	C7	Baiton, Nicholas, "Maximize Oil Production and Recovery," Vertizontal Brochure, received 10/2/2002, 4 pages
	C8	Dreiling, Tim, McClelland, M.L. and Bilyeu, Brad, "Horizontal & High Angle Air Drilling in the San Juan Basin, New Mexico," Dated on or about 3/6/2003, pp. 1-11
	C9	Fong, David K., Wong, Frank Y., and McIntyre, Frank J., "An Unexpected Benefit of Horizontal Wells on Offset Vertical Well Productivity in Vertical Miscible Floods," Canadian SPE/CIM/CANMET Paper No. HWC94-09, paper to be presented March 20-23, 1994, Calgary, Canada, 10 pages
	C10	Fischer, Perry A., "What's Happening in Production," World Oil, June 2001, p. 27
	C11	Website of PTTC Network News Volume 7, 1 st Quarter 2001, Table of Contents, http://www.pttc.org/./news/v7n1nn4.htm printed 04/25/2003, 3 pages
	C12	Cox, Richard J.W., "Testing Horizontal Wells While Drilling Underbalanced," Delft University of Technology, August 1998, 68 pages
	C13	McLennan, John, et al., "Underbalanced Drilling Manual," Gas Research Institute, Chicago, Illinois, GRI Reference No. GRI-97/0236, copyright 1997, 502 pages
	C14	The Need for a Viable Multi-Seam Completion Technology for the Powder River Basin, Current Practice and Limitations, Gardes Energy Services, Inc., Believed to be 2003 (8 pages)
	C15	Langley, Diane, "Potential Impact of Microholes Is Far From Diminutive," JPT Online, http://www.spe.org/spe/jpt/jps , November 2004 (5 pages)
	C16	Consol Energy Slides, "Generating Solutions, Fueling Change," Presented at Appalachian E&P Forum, Harris Nesbitt Corp., Boston, October 14, 2004 (29 pages)
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Other Documents (include Author, Title, Date, and Place of Publication)		
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<i>h</i>	C19	U.S. Department of Interior, U.S. Geological Survey, "Characteristics of Discrete and Basin-Centered Parts of the Lower Silurian Regional Oil and Gas Accumulation, Appalachian Basin: Preliminary Results From a Data Set of 25 oil and Gas Fields," U.S. Geological Survey Open-File Report 98-216, Website, http://pubs.usgs.gov/of/1998/of98-216/introl.htm , printed November 16, 2004 (2 pages)
<i> </i>	C20	Zupanick, J., "Coalbed Methane Extraction," 28 th Mineral Law Conference, Lexington, Kentucky, October 16-17, 2003 (48 pages)
<i> </i>	C21	Zupanick, J., "CDX Gas – Pinnacle Project," Presentation at the 2002 Fall Meeting of North American Coal Bed Methane Forum, Morgantown, West Virginia, October 30, 2002 (23 pages)
<i> </i>	C22	Lukas, Andrew, Lucas Drilling Pty Ltd., "Technical Innovation and Engineering Xstrata – Oaky Creek Coal Pty Limited," Presentation at Coal Seam Gas & Mine Methane Conference in Brisbane, November 22-23, 2004 (51 pages)
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	C24	Zupanick, Joseph A., "Coal Mine Methane Drainage Utilizing Multilateral Horizontal Wells," 2005 SME Annual Meeting & Exhibit, February 28 – March 2, 2005, Salt Lake City, Utah (6 pages)
<i>h</i>	C25	The Official Newsletter of the Cooperative Research Centre for Mining Technology and Equipment, CMTE News 7, "Tight-Radius Drilling Clinches Award," June 2001, 1 page

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	A1						
	A2						
	A3						

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
<i>K</i>	B1	WO 97/21900	06/19/1997	WIPO			N/A	
	B2							
	B3							

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<i>K</i>	C1	Dreiling, Tim, McClelland, M.L. and Bilyeu, Brad, "Horizontal & High Angle Air Drilling in the San Juan Basin, New Mexico," Believed to be dated April 1996, pp. 1-11
	C2	Listing of 174 References received from Third Party on February 16, 2005 (9 pages)
	C3	Gardes Directional Drilling, "Multiple Directional Wells From Single Borehole Developed," Reprinted from July 1989 edition of Offshore, Copyright 1989 by PennWell Publishing Company (4 pages)
	C4	"Economic Justification and Modeling of Multilateral Wells," Economic Analysis, Hart's Petroleum Engineer International, 1997 (4 pages)
	C5	Mike Chambers, "Multi-Lateral Completions at Mobil Past, Present, and Future," presented at the 1998 Summit on E&P Drilling Technologies, Strategic Research Institute, August 18-19, 1998 in San Antonio, Texas (26 pages)
	C6	David C. Oyler and William P. Diamond, "Drilling a Horizontal Coalbed Methane Drainage System From a Directional Surface Borehole," PB82221516, National Technical Information Service, Bureau of Mines, Pittsburgh, PA, Pittsburgh Research Center, April 1982 (56 pages)
	C7	P. Corlay, D. Bossie-Codreanu, J.C. Sabathier and E.R. Delamaide, "Improving Reservoir Management With Complex Well Architectures," Field Production & Reservoir Management, World Oil, January 1997 (5 pages)
	C8	Eric R. Skonberg and Hugh W. O'Donnell, "Horizontal Drilling for Underground Coal Gasification," presented at the Eighth Underground Coal Conversion Symposium, Keystone, Colorado, August 16, 1982 (8 pages)
<i>9</i>	C9	Gamal Ismail, A.S. Fada'q, S. Kikuchi, H. El Khatib, "Ten Years Experience in Horizontal Application & Pushing the Limits of Well Construction Approach in Upper Zakum Field (Offshore Abu Dhabi)," SPE 87284, Society of Petroleum Engineers, October 2000 (17 pages)
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<i>a</i>	C10	Gamal Ismail, H. El-Khatib – ZADCO, Abu Dhabi, UAE, "Multi-Lateral Horizontal Drilling Problems & Solutions Experienced Offshore Abu Dhabi," SPE 36252, Society of Petroleum Engineers, October 1996 (12 pages)
	C11	C.M. Matthews and L.J. Dunn, "Drilling and Production Practices to Mitigate Sucker Rod/Tubing Wear-Related Failures in Directional Wells," SPE 22852, Society of Petroleum Engineers, October 1991 (12 pages)
	C12	H.H. Fields, Stephen Krickovic, Albert Sainato, and M.G. Zabetakis, "Degasification of Virgin Pittsburgh Coalbed Through a Large Borehole," RI-7800, Bureau of Mines Report of Investigations/1973, United States Department of the Interior, 1973 (31 pages)
	C13	William P. Diamond, "Methane Control for Underground Coal Mines," IC-9395, Bureau of Mines Information Circular, United States Department of the Interior, 1994 (51 pages)
	C14	Technology Scene Drilling & Intervention Services, "Weatherford Moves Into Advanced Multilateral Well Completion Technology" and "Productivity Gains and Safety Record Speed Acceptance of UBS," <i>Reservoir Mechanics</i> , Weatherford International, Inc., 2000 Annual Report (2 pages)
	C15	"A Different Direction for CBM Wells," <i>W Magazine</i> , 2004 Third Quarter (5 pages)
	C16	Snyder, Robert E., "What's New in Production," <i>WorldOil Magazine</i> , February 2005, [printed from the internet on 3/7/2005], http://www.worldoil.com/magazine/MAGAZINE_DETAIL.asp?ART_ID=2507@MONTH_YEAR (3 pages)
	C17	Nazzal, Greg, "Moving Multilateral Systems to the Next Level, Strategic Acquisition Expands Weatherford's Capabilities," 2000 (2 pages)
	C18	Bahr, Angie, "Methane Draining Technology Boosts Safety and Energy Production," <i>Energy Review</i> , February 4, 2005, Website: www.energyreview.net/storyviewprint.asp , printed February 7, 2005 (2 pages)
	C19	Molvar, Erik M., "Drilling Smarter: Using Directional Drilling to Reduce Oil and Gas Impacts in the Intermountain West," Prepared by Biodiversity Conservation Alliance, Report issued February 18, 2003, 34 pages
	C20	King, Robert F., "Drilling Sideways – A Review of Horizontal Well Technology and Its Domestic Application," DOE/EIA-TR-0565, U.S. Department of Energy, April 1993, 30 pages
	C21	Santos, Helio, SPE, Impact Engineering Solutions and Jesus Olaya, Ecopetrol/ICP, "No-Damage Drilling: How to Achieve this Challenging Goal?," SPE 77189, Copyright 2002, presented at the IADC/SPE Asia Pacific Drilling Technology, Jakarta, Indonesia, 09/09-11/2002, 10 pages
	C22	Santos, Helio, SPE, Impact Engineering Solutions, "Increasing Leakoff Pressure with New Class of Drilling Fluid," SPE 78243, Copyright 2002, presented at the SPE/ISRM Rock Mechanics Conference in Irving, Texas, 10/20-23/2002, 7 pages
<i>a</i>	C23	Franck Labenski, Paul Reid, SPE, and Helio Santos, SPE, Impact Solutions Group, "Drilling Fluids Approaches for Control of Wellbore Instability in Fractured Formations," SPE/IADC 85304, Society of Petroleum Engineers, Copyright 2003, presented at the SPE/IADC Middle East Drilling Technology Conference & Exhibition in Abu Dhabi, UAE, 10/20-22/2003, 8 pages

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<i>Q</i>	C24	P. Reid, SPE, and H. Santos, SPE, Impact Solutions Group, "Novel Drilling, Completion and Workover Fluids for Depleted Zones: Avoiding Losses, Formation Damage and Stuck Pipe," SPE/IADC 85326, Society of Petroleum Engineers, Copyright 2003, presented at the SPE/IADC Middle East Drilling Conference & Exhibition in Abu Dhabi, UAE, 10/20-22/2003, 9 pages
<i> </i>	C25	Craig C. White and Adrian P. Chesters, NAM; Catalin D. Ivan, Sven Maikranz and Rob Nouris, M-I L.L.C., "Aphron-based drilling fluid: Novel technology for drilling depleted formations," WORLD OIL, Drilling Report Special Focus, October 2003, 6 pages
<i> </i>	C26	U.S. Environmental Protection Agency, "Directional Drilling Technology," prepared for the EPA by Advanced Resources International under Contract 68-W-00-094, Coalbed Methane Outreach Program (CMOP), Website: http://search.epa.gov/s97is.vts , printed 3/17/2005, 13 pages
<i> </i>	C27	Logan, Terry L., "Horizontal Drainhole Drilling Techniques Used in Rocky Mountain Coal Seams," <u>Geology and Coal-Bed Methane Resources of the Northern San Juan Basin, Colorado and New Mexico</u> , published by Rocky Mountain Association of Geologists, 1988, cover and pp. 133-142
<i> </i>	C28	Leazer, Clint, and Marquez, Michael R., "Short-Radius Drilling Expands Horizontal Well Applications," <u>Petroleum Engineer International</u> , cover, news highlights page, and pages 21, 23-24 and 26, April 1995
<i>a</i>	C29	"Meridian Tests New Technology," <u>Western Oil World</u> , cover, table of contents and page 13, June 1990

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